

TAXONOMIC NOTES ON *SCHEDONORUS*, A SEGREGATE GENUS FROM *FESTUCA* OR *LOLIUM*, WITH A NEW NOTHOGENUS, × *SCHEDOLOLIUM*, AND NEW COMBINATIONS

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ABSTRACT

The genus *Schedonorus* P. Beauv. is accepted with a new combination, *Schedonorus giganteus* (L.) Soreng & Terrell. A new nothogenus, × *Schedololium* Soreng & Terrell, is created for hybrids between *Schedonorus* and *Lolium*, and five nothospecies are transferred to that; × *Schedololium braunii* (K. Richt.) Soreng & Terrell, × *Schedololium brinkmannii* (A. Braun) Soreng & Terrell, × *Schedololium holmbergii* (Dörfel.) Soreng & Terrell, × *Schedololium loliaceum* (Huds.) Soreng & Terrell, × *Schedololium nilssonii* (Cugnac & A. Camus) Soreng & Terrell.

KEY WORDS: *Festuca pratensis* complex, *Lolium*, *Schedonorus*, × *Schedololium*, Poaceae, Poaeae, taxonomy

The taxonomic relationships of the three species traditionally placed in *Festuca*, *F. arundinacea* Schreb. (tall fescue), *F. pratensis* Huds. (meadow fescue), and *F. gigantea* (L.) Vill. (giant fescue), and widely discussed as the *Festuca pratensis* complex, have been subjected to intense scrutiny over the past few years. Darbyshire & Warwick (1992) and Darbyshire (1993; see for review of various data) concluded that several kinds of evidence favored union of the three species with *Lolium* rather than *Festuca*. On the other hand, Aiken *et al.* (1997) took an opposite position, retaining them under *Festuca* subgenus *Schedonorus*.

It is clear that these species have chloroplast DNA (*cpDNA*) types that are derived in common with the types found in *Lolium* and that these types significantly differ from the *cpDNA* types present in *Festuca* proper or in *Vulpia* (Darbyshire & Warwick 1992; Kiang *et al.* 1994; Spangenberg *et al.* 1994; Xu & Sleper 1994; Charmet *et al.* 1997; Soreng & Davis 1998, and unpublished *cpDNA* restriction site data). In the Charmet *et al.* (1997) study, phenetic analysis of ribosomal DNA internal transcribed spacer sequences, of nuclear genome origin, resolved essentially the same relationships between the *Festuca*, *Lolium*, and species of the *Schedonorus* complex as those detected by their analysis of *cpDNA* restriction site bands.

For forthcoming treatments of North American Poaceae we prefer to place the three species in question within the genus *Schedonorus*, which was first created by Beauvois (1812). In order to do so a new combination is needed for *Festuca gigantea*. A prior publication of *Schedonorus giganteus* Gaudin *ex* Roem. & Schult. (*Syst. Veg.* 2:644. 1817.) is invalid as it was published in synonymy, and so the name was not effectively published. A nomenclatural summary of the pertinent names is provided here.

Schedonorus P. Beauv., *Ess. Agrostogr.* 99, 162, 177. (1812). *Festuca* subgen. *Schedonorus* (P. Beauv.) Peterm., *Deutschl. Fl.* 643. 1849. *Festuca* sect. *Schedonorus* (P. Beauv.) W.D.J. Koch, *Syn. Fl. Germ. Helv.* 813. 1837. *Lolium* subgen. *Schedonorus* (P. Beauv.) Darbysh., *Novon* 3(3):241. 1993. LECTOTYPUS: *Schedonorus elatior* (L.) P. Beauv., based on *Festuca elatior* L., *nom. rej.* (Reveal *et al.* 1991; = *Schedonorus arundinaceus* [Schreb.] Dumort.).

Schedonorus arundinaceus (Schreb.) Dumort., *Observ. Gramin. Belg.* 106. 1824. BASIONYM: *Festuca arundinacea* Schreb., *Spic. Fl. Lips.* 57. 1771. *Lolium arundinaceum* (Schreb.) Darbysh., *Novon* 3(3):241. 1993.

Schedonorus pratensis (Huds.) P. Beauv., *Ess. Agrostogr.* 99, 163, 177. 1812. BASIONYM: *Festuca pratensis* Huds., *Fl. Angl.* 37. 1762. *Lolium pratensis* (Huds.) Darbysh., *Novon* 3(3):242. 1993.

Schedonorus giganteus (L.) Soreng & Terrell, *comb. nov.* BASIONYM: *Bromus giganteus* L., *Sp. Pl.* 1:77. 1753. *Festuca gigantea* (L.) Vill., *Hist. Pl. Dauph.* 2:110. 1787. *Lolium giganteum* (L.) Darbysh., *Novon* 3(3):241. 1993.

In addition, several naturally occurring hybrids between these species of *Schedonorus* and species of *Lolium* have been named. The most common of these were recognized by Stace (1991) and Humphries (1980) in the hybrid genus × *Festulolium* Asch. & Graebn., but as that nothogenus is restricted to hybrids between *Festuca* and *Lolium*, a new nothogenus is needed to accommodate the hybrids in question. Some of these crosses are likely to occur spontaneously in North America.

× *Schedololium* Soreng & Terrell, *nothogenus nov.*, *Schedonorus* P. Beauv. × *Lolium* L. TYPUS: × *Schedololium loliaceum* (Huds.) Soreng & Terrell.

- × *Schedololium braunii* (K. Richt.) Soreng & Terrell, *comb. nov.* BASIONYM: *Festuca* × *braunii* K. Richt., *Pl. Eur.* 1:103. 1890. × *Festulolium braunii* (K. Richt.) A. Camus, *Bull. Mus. Hist. Nat. (Paris)* 33:538. 1927. *Schedonorus pratensis* (Huds.) P. Beauv. × *Lolium multiflorum* Lam.
- × *Schedololium brinkmannii* (A. Braun) Soreng & Terrell, *comb. nov.* BASIONYM: *Festuca* × *brinkmannii* A. Braun, *Ind. Sem. (Berlin) App.* 11. 1861. × *Festulolium brinkmannii* (A. Braun) Asch. & Graebn., *Syn. Mitteleur. Fl.* 2:769. 1902. *Schedonorus giganteus* (L.) Soreng & Terrell × *Lolium perenne* L.
- × *Schedololium holmbergii* (Dörf.) Soreng & Terrell, *comb. nov.* BASIONYM: *Festuca* × *holmbergii* Dörf., *Beih. Bot. Centralbl.* 32:651. 1911. × *Festulolium holmbergii* (Dörf.) P. Fourn., *Quatre Fl. France* 81. 1935. *Schedonorus arundinaceus* (Schreb.) Dumort. × *Lolium perenne* L.
- × *Schedololium loliaceum* (Huds.) Soreng & Terrell, *comb. nov.* BASIONYM: *Festuca loliacea* Huds., *Fl. Angl.* 38. 1762. *Schedonorus loliaceus* (Huds.) P. Beauv., *Ess. Agrostogr.* 99, 163, 177. 1812. *Lolium* × *festucaceum* Link, *Linnaea* 2:235. 1827. × *Festulolium loliaceum* (Huds.) P. Fourn., *Quatre Fl. France* 81. 1935. *Schedonorus pratensis* (Huds.) P. Beauv. × *Lolium perenne* L.
- × *Schedololium nilssonii* (Cugnac & A. Camus) Soreng & Terrell, *comb. nov.* BASIONYM: × *Festulolium nilssonii* Cugnac & A. Camus, *Bull. Soc. Bot. Fr.* 19:19. 1944. *Schedonorus giganteus* (L.) Soreng & Terrell × *Lolium multiflorum* Lam.

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